NOTICE

Every alumnus of the College of Engineering of Ohio State should be a subscriber to this magazine. The magazine is improving with every issue and it could be made better with a larger subscription list. Keep in touch with your university and the interesting things which are going on there. Fill out this blank and become a regular subscriber, or if you are a subscriber, give it to some one who is not.

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Gentlemen:

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GOOD LIGHTING OF INDUSTRIAL PLANTS SECURES SAFETY AND EFFICIENCY.

The Code of Lighting for factories, mills and other work places of the State of New Jersey makes excellent recommendations of daylight for the proper lighting of industrial buildings.

Adequate daylight facilities through large window areas, together with light, cheerful surroundings, are highly desirable and necessary features in every work place, and they should be supplied through the necessary channels, not only from the humane standpoint, but also from the viewpoint of maximum plant efficiency.

Importance of Daylight.

The unusual attention to gas and electric lighting in factories, mills and other work places during the past few years; the perfection of various lamps and auxiliaries, by means of which an improved quality and quantity of lighting effects are obtained; and the care which has been devoted to increasing the efficiency in various industrial apparatus—all go to emphasize the many advantages and economies that result from vital and adequate window space, as a means for daylight in the proper quantities, and in the right direction during those portions of the day when it is available.

Three Considerations.

Three important considerations of any lighting method are sufficiency, continuity and diffusion, with respect to the daylight illumination of interiors. Sufficiency demands adequate window area; continuity requires (a) large enough window area for use on reasonably dark days, (b) means for reducing the illumination when excessive, due to direct sunshine, and supplementing lighting equipment for use on particularly dark days, and especially towards the close of winter days, (c) diffusion demands interior decorations that are as light in color as practicable for ceilings and upper portions of walls, and of a dull or matt finish, in order that the light which enters the windows or that which is produced by lamps may not be absorbed and lost on the first object that it strikes; but that it may be returned by reflection and thus be used over and over again.

Diffusion also requires that the various sources of light, whether windows, skylights or lamps, be well distributed about the space to be lighted. Light colored surroundings as here suggested result in marked economy, but their main object is perhaps not so much economy as to obtain results that will be satisfactory to the human eve.

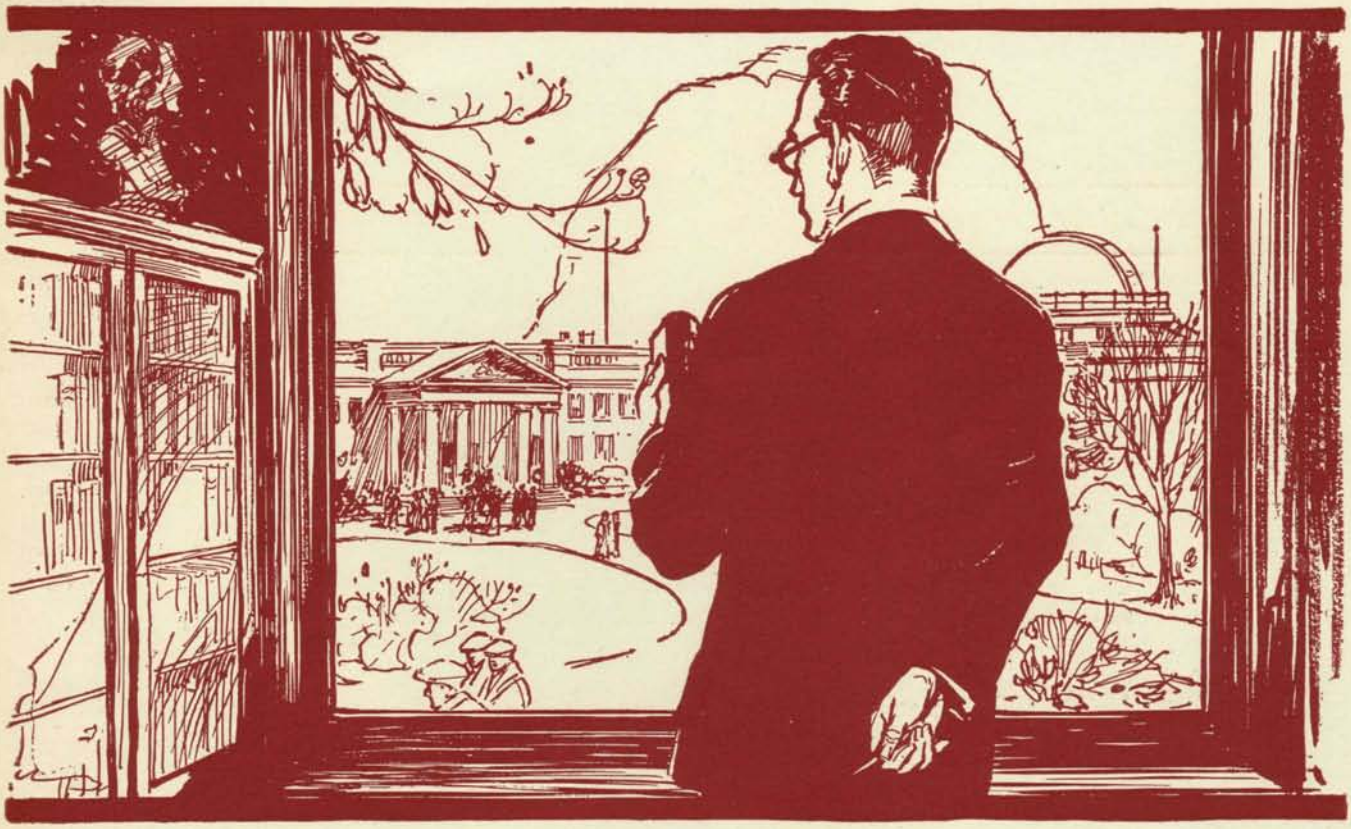
Requirements for natural lighting:

1. The light should be adequate for each employe.
2. The windows should be so spaced and located that daylight is fairly uniform over the working area.
3. The intensities of daylight should be such that artificial light will be required only during those portions of the day when it would naturally be considered necessary.
4. The windows should provide a quality of daylight which will avoid a glare, due to the sun's rays, and light from the sky shining directly into the eye, or where this does not prove to be the case at all parts of the day, window shades or other means should be available to make this end possible.

As will be noticed in the above recommendations, large windows and proper diffusion of daylight are urged, in order to meet the demands of daylight lighting.

Shades may be eliminated and most efficient lighting obtained by the use of Factrolite Glass.

If interested in the distribution of light through Factrolite, we will send you a copy of Laboratory Report—"Factrolited."



Teaching Engineering—a Real Man's Work

"Why are you satisfied to spend your days here when you might be doing bigger and more remunerative work with us?" The speaker was the Vice President of a big corporation, and he was addressing a great chemist.

The man to whom he spoke looked from his study window out over a well-loved campus for several moments before he replied. Finally his answer came, "I guess it's because I am more interested in helping to make *men* than I would be in just making *things*."

This thing of building men is one of the most fascinating vocations known. The pleasure that grows out of watching men develop, out of seeing them make effective use of the fundamentals that have been so carefully given them to use—it is doubtful if there can be any pleasure much deeper or more satisfying.

The teacher honors himself in the usefulness of his students. And the teacher of engineering, especially. His laboratory and his materials are in the minds of men. He shows them the right and constructive use of the senses and the memory in securing and storing information. He trains the judgment and the will to analyze and to decide. Little by little he develops the will to do, the ability to turn decision into accomplishment, the quality that always marks the successful engineer, who is a man who gets things done.

Westinghouse, and every engineering business, must acknowledge a deep obligation to those teachers whose training and interest have been an inspiration and a sure foundation for the individual successes that are constantly being recorded. And nothing that men or events may do can deprive the teacher of his rightful share of such triumphs!

Westinghouse

ACHIEVEMENT & OPPORTUNITY

WESTINGHOUSE ELECTRIC

VOLTA EXPLAINING HIS BATTERY TO NAPOLEON

How Electrical Engineering began

IT IS not enough to experiment and to observe in scientific research. There must also be interpretation. Take the cases of Galvani and Volta.

One day in 1786 Galvani touched with his metal instruments the nerves of a frog's amputated hind legs. The legs twitched in a very life-like way. Even when the frog's legs were hung from an iron railing by copper hooks, the phenomenon persisted. Galvani knew that he was dealing with electricity but concluded that the frog's legs had in some way generated the current.

Then came Volta, a contemporary, who said in effect: "Your interpretation is wrong. Two different metals in contact with a moist nerve set up currents of electricity. I will prove it without the aid of frog's legs."

Volta piled disks of different metals one on top of another and separated the disks with moist pieces of cloth. Thus he generated a steady current. This was the "Voltaic pile"—the first battery, the first generator of electricity.

Both Galvani and Volta were careful experimenters, but Volta's correct interpretation of effects gave us electrical engineering.

Napoleon was the outstanding figure in the days of Galvani and Volta. He too possessed an active interest in science but only as an aid to Napoleon. He little imagined on examining Volta's crude battery that its effect on later civilization would be fully as profound as that of his own dynamic personality.

The effects of the work of Galvani and Volta may be traced through a hundred years of electrical development even to the latest discoveries made in the Research Laboratories of the General Electric Company.

General Electric Company

General Office Schenectady, N.Y.

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